



**The POLICY Project**

# **The Economic Impact of AIDS in Madagascar**

by  
Lori Bollinger  
John Stover

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The Futures Group International  
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AIDS has the potential to create severe economic impacts in many African countries. It is different from most other diseases because it strikes people in the most productive age groups and is essentially 100 percent fatal. The effects will vary according to the severity of the AIDS epidemic and the structure of the national economies. The two major economic effects are a reduction in the labor supply and increased costs:

#### Labor Supply

- The loss of young adults in their most productive years will affect overall economic output
- If AIDS is more prevalent among the economic elite, then the impact may be much larger than the absolute number of AIDS deaths indicates

#### Costs

- The direct costs of AIDS include expenditures for medical care, drugs, and funeral expenses
- Indirect costs include lost time due to illness, recruitment and training costs to replace workers, and care of orphans
- If costs are financed out of savings, then the reduction in investment could lead to a significant reduction in economic growth

<b>LABOR FORCE STATISTICS</b>		
	<b>Economically Active Labor Force: 1993</b>	
<b>Sector</b>	<b>'000s</b>	<b>%</b>
<b>AGRICULTURE</b>		
Agriculture, hunting, forestry and fishing	5,140	86.9
<b>INDUSTRY</b>		
Manufacturing/Mining industries	86	1.4
<b>SERVICES</b>		
Construction	46	0.8
Trade, banking and insurance	149	2.5
Transport and communications	42	0.07
Administration	208	3.5
Other activities	243	4.1
<b>TOTAL LABOR FORCE</b>	<b>5,914</b>	<b>100.0</b>

The economy of Madagascar is heavily reliant on agriculture, which accounted for 31% of GDP in 1996, and employed 87% of the population in 1993. Over 50% of the cultivated land is devoted to rice, although the most important cash crops are coffee and vanilla. Fishing is also an important source of both

food and GDP for Madagascar. Manufacturing industries contributed about 12% of GDP in 1991, with petroleum refining forming the greatest part of that contribution, using imported petroleum. The agricultural sector is vulnerable to both weather conditions and international price variation. The government is currently undertaking certain structural adjustment policies, with the assistance of both the IMF and the World Bank.<sup>1</sup>

<sup>1</sup> Europa World Year Book 1998, Volume 2 (1998) Europa Publications Limited (London).

The economic effects of AIDS will be felt first by individuals and their families, then ripple outwards to firms and businesses and the macro-economy. This paper will consider each of these levels in turn and provide examples from Madagascar to illustrate these impacts.

In general, there is very little economic impact of AIDS in Madagascar at this time. Prevalence is extremely low, so that no research has been done evaluating the effect on the economy. Conditions are present, however, that could contribute to an increase in the prevalence rate: a high prevalence of STDs, numerous sexual partners, low use of condoms, the presence of commercial sex workers, and a migratory population. Prevention efforts have begun, and the government hopes the low prevalence rate continues to remain low. Most of the economic evidence is based on simulation model results, predicting effects in the future, should the prevalence rate increase.<sup>2</sup>

### **Economic Impact of AIDS on Households**

The household impacts begin as soon as a member of the household starts to suffer from HIV-related illnesses:

- Loss of income of the patient (who is frequently the main breadwinner)
  - Household expenditures for medical expenses may increase substantially
  - Other members of the household, usually daughters and wives, may miss school or work less in order to care for the sick person
  - Death results in: a permanent loss of income, from less labor on the farm or from lower remittances; funeral and mourning costs; and the removal of children from school in order to save on educational expenses and increase household labor, resulting in a severe loss of future earning potential.
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- A simulation model predicts that there may be between 107,000 and 548,000 orphans by 2015, depending on whether the assumed prevalence level is 3% or 15% at that time.

### **Economic Impact of AIDS on Agriculture**

Agriculture is the largest sector in most African economies accounting for a large portion of production and a majority of employment. Studies done in Tanzania and other countries have shown that AIDS will have adverse effects on agriculture, including loss of labor supply and remittance income. The loss of a few workers at the crucial periods of planting and harvesting can significantly reduce the size of the harvest. In countries where food security has been a continuous issue because of drought, any declines in household production can have serious consequences. Additionally, a loss of agricultural

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<sup>2</sup> Ravaoarimalala, C, R Andriamahenina, B Ravelojaona, D Rabeson, J Andriamiadana, JF May F Behets, A Rasamindrakotroka (1998) "AIDS in Madagascar: Intervention Policy for maintaining low HIV infection prevalence," Bulletin Soc Pathol Exot. 1998;91(1):71-3.

labor is likely to cause farmers to switch to less-labor-intensive crops. In many cases this may mean switching from export crops to food crops. Thus, AIDS could affect the production of cash crops as well as food crops.

### **Economic Impact of AIDS on Firms**

AIDS may have a significant impact on some firms. AIDS-related illnesses and deaths to employees affect a firm by both increasing expenditures and reducing revenues. Expenditures are increased for health care costs, burial fees and training and recruitment of replacement employees. Revenues may be decreased because of absenteeism due to illness or attendance at funerals and time spent on training. Labor turnover can lead to a less experienced labor force that is less productive.

Factors Leading to Increased Expenditure	Factors Leading to Decreased Revenue
Health care costs	Absenteeism due to illness
Burial fees	Time off to attend funerals
Training and recruitment	Time spent on training
	Labor turnover

For some smaller firms the loss of one or more key employees could be catastrophic, leading to the collapse of the firm. In others, the impact may be small. Firms in some key sectors, such as transportation and mining, are likely to suffer larger impacts than firms in other sectors. In poorly managed situations the HIV-related costs to companies can be high. However, with proactive management these costs can be mitigated through effective prevention and management strategies.

### **Impacts on Other Economic Sectors**

AIDS will also have significant effects in other key sectors. Among them are health, transport, mining, education and water.

- **Health.** AIDS will affect the health sector for two reasons: (1) it will increase the number of people seeking services and (2) health care for AIDS patients is more expensive than for most other conditions. Governments will face trade-offs along at least three dimensions: treating AIDS versus preventing HIV infection; treating AIDS versus treating other illnesses; and spending for health versus spending for other objectives. Maintaining a healthy population is an important goal in its own right and is crucial to the development of a productive workforce essential for economic development.
- Simulation results indicate that the direct costs of caring for AIDS patients will range from US\$10.75 million and US\$52.75 million by 2015, where the lower estimate is based on an assumed prevalence rate of 3%, and the higher estimate is based on an assumed prevalence rate of 15%. These costs are based on treating

AIDS only, and do not include treatment costs for opportunistic infections. The Ministry of Health will not be able to afford to pay for these costs, particularly if the higher scenario prevails.<sup>3</sup>

- **Transport.** The transport sector is especially vulnerable to AIDS and important to AIDS prevention. Building and maintaining transport infrastructure often involves sending teams of men away from their families for extended periods of time, increasing the likelihood of multiple sexual partners. The people who operate transport services (truck drivers, train crews, sailors) spend many days and nights away from their families. Most transport managers are highly trained professionals who are hard to replace if they die. Governments face the dilemma of improving transport as an essential element of national development while protecting the health of the workers and their families.
- **Mining.** The mining sector is a key source of foreign exchange for many countries. Most mining is conducted at sites far from population centers forcing workers to live apart from their families for extended periods of time. They often resort to commercial sex. Many become infected with HIV and spread that infection to their spouses and communities when they return home. Highly trained mining engineers can be very difficult to replace. As a result, a severe AIDS epidemic can seriously threaten mine production.
- **Education.** AIDS affects the education sector in at least three ways: the supply of experienced teachers will be reduced by AIDS-related illness and death; children may be kept out of school if they are needed at home to care for sick family members or to work in the fields; and children may drop out of school if their families can not afford school fees due to reduced household income as a result of an AIDS death. Another problem is that teenage children are especially susceptible to HIV infection. Therefore, the education system also faces a special challenge to educate students about AIDS and equip them to protect themselves.
- **Water.** Developing water resources in arid areas and controlling excess water during rainy periods requires highly skilled water engineers and constant maintenance of wells, dams, embankments, etc. The loss of even a small number of highly trained engineers can place entire water systems and significant investment at risk. These engineers may be especially susceptible to HIV because of the need to spend many nights away from their families.

### Macroeconomic Impact of AIDS

The macroeconomic impact of AIDS is difficult to assess. Most studies have found that estimates of the macroeconomic impacts are sensitive to assumptions about how AIDS

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<sup>3</sup> Figures are in constant 1996 US dollars, using an exchange rate of 400 FMG/dollar. Futures Group International (1996) "Etude de l'Impact Socio-economique du VIH/SIDA a Madagascar," Projet Banque Mondiale Credit CR1697-MAG. Washington DC.

affects savings and investment rates and whether AIDS affects the best-educated employees more than others. Few studies have been able to incorporate the impacts at the household and firm level in macroeconomic projections. Some studies have found that the impacts may be small, especially if there is a plentiful supply of excess labor and worker benefits are small.

There are several mechanisms by which AIDS affects macroeconomic performance.

- AIDS deaths lead directly to a reduction in the number of workers available. These deaths occur to workers in their most productive years. As younger, less experienced workers replace these experienced workers, worker productivity is reduced.
- A shortage of workers leads to higher wages, which leads to higher domestic production costs. Higher production costs lead to a loss of international competitiveness which can cause foreign exchange shortages.
- Lower government revenues and reduced private savings (because of greater health care expenditures and a loss of worker income) can cause a significant drop in savings and capital accumulation. This leads to slower employment creation in the formal sector, which is particularly capital intensive.
- Reduced worker productivity and investment leads to fewer jobs in the formal sector. As a result some workers will be pushed from high paying jobs in the formal sector to lower paying jobs in the informal sector.
- The overall impact of AIDS on the macro-economy is small at first but increases significantly over time.

### **What Can Be Done?**

AIDS has the potential to cause severe deterioration in the economic conditions of many countries. However, this is not inevitable. There is much that can be done now to keep the epidemic from getting worse and to mitigate the negative effects. Among the responses that are necessary are:

- **Prevent new infections.** The most effective response will be to support programs to reduce the number of new infections in the future. After more than a decade of research and pilot programs, we now know how to prevent most new infections. An effective national response should include information, education and communications; voluntary counseling and testing; condom promotion and availability; expanded and improved services to prevent and treat sexually transmitted diseases; and efforts to protect human rights and reduce stigma and discrimination. Governments, NGOs and the commercial sector, working together in a multi-sectoral

effort can make a difference. Workplace-based programs can prevent new infections among experienced workers.

- The government of Madagascar has made efforts to implement prevention efforts in the country in order to maintain the low HIV prevalence rate, including information dissemination to high and medium level decision makers and opinion leaders, and training seminars for journalists.<sup>4</sup>
- **Design major development projects appropriately.** Some major development activities may inadvertently facilitate the spread of HIV. Major construction projects often require large numbers of male workers to live apart from their families for extended periods of time, leading to increased opportunities for commercial sex. A World Bank-funded pipeline construction project in Cameroon was redesigned to avoid this problem by creating special villages where workers could live with their families. Special prevention programs can be put in place from the very beginning in projects such as mines or new ports where commercial sex might be expected to flourish.
- **Programs to address specific problems.** Special programs can mitigate the impact of AIDS by addressing some of the most severe problems. Reduced school fees can help children from poor families and AIDS orphans stay in school longer and avoid deterioration in the education level of the workforce. Tax benefits or other incentives for training can encourage firms to maintain worker productivity in spite of the loss of experienced workers.
- **Mitigate the effects of AIDS on poverty.** The impacts of AIDS on households can be reduced to some extent by publicly funded programs to address the most severe problems. Such programs have included home care for people with HIV/AIDS, support for the basic needs of the households coping with AIDS, foster care for AIDS orphans, food programs for children and support for educational expenses. Such programs can help families and particularly children survive some of the consequences of an adult AIDS death that occur when families are poor or become poor as a result of the costs of AIDS.

*A strong political commitment to the fight against AIDS is crucial. Countries that have shown the most success, such as Uganda, Thailand and Senegal, all have strong support from the top political leaders. This support is critical for several reasons. First, it sets the stage for an open approach to AIDS that helps to reduce the stigma and discrimination that often hamper prevention efforts. Second, it facilitates a multi-sectoral approach by making it clear that the fight against AIDS is a national priority. Third, it signals to individuals and community organizations involved in the AIDS programs that their efforts are appreciated and valued. Finally, it ensures that the program will receive an*

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<sup>4</sup> Ravaorimalala, C, F Behets, D Rabeson, J May, B Andriamahefazy, A Rasamindrakotroka (1996) "Policy interventions to preserve low HIV prevalence in Madagascar," Int Conf AIDS;11(2):44 (abstract no. We.D.233).



*appropriate share of national and international donor resources to fund important programs.*

*Perhaps the most important role for the government in the fight against AIDS is to ensure an open and supportive environment for effective programs. Governments need to make AIDS a national priority, not a problem to be avoided. By stimulating and supporting a broad multi-sectoral approach that includes all segments of society, governments can create the conditions in which prevention, care and mitigation programs can succeed and protect the country's future development prospects.*